

What is claimed is:

1. A method of modulating gastric acid or pepsinogen secretion, comprising administering an amount of a prokineticin receptor antagonist effective to alter one or 5 more indicia of gastric acid or pepsinogen secretion, wherein said antagonist comprises an amino acid sequence at least 80% identical to amino acids 7 to 77 of SEQ ID NO:3, said sequence comprising;
 - (a) the 10 conserved cysteine residues of 10 SEQ ID NO:3, and
 - (b) from 0 to 9 of amino acids 78 to 86 of SEQ ID NO:3,

wherein amino acids 1 to 6 of said antagonist do not consist of amino acids AVITGA (SEQ ID NO:21).
- 15 2. The method of claim 1, wherein said antagonist comprises 6 or more amino acids N-terminal to the first conserved cysteine residue.
3. The method of claim 1, wherein said antagonist comprises 7 or more amino acids N-terminal to the first 20 conserved cysteine residue.
4. The method of claim 3, wherein said 7 or more amino acids are MAVITGA (SEQ ID NO:23).
5. The method of claim 4, wherein said antagonist comprises SEQ ID NO:18.

6. The method of claim 5, wherein said antagonist consists of SEQ ID NO:18.

7. The method of claim 1, wherein said antagonist 5 comprises SEQ ID NO:20.

8. The method of claim 1, wherein said antagonist consists of SEQ ID NO:20.

9. The method of claim 1, wherein said antagonist 10 comprises 5 or fewer amino acids N-terminal to said first conserved cysteine residue.

10. The method of claim 9, wherein said 5 or fewer amino acids are VITGA (SEQ ID NO:22).

11. The method of claim 10, wherein said 15 antagonist comprises SEQ ID NO:16.

12. The method of claim 11, wherein said antagonist consists of SEQ ID NO:16.

13. The method of claim 1, wherein amino acid 20 residues that differ from residues 7 to 77 of SEQ ID NO:3 are conservative substitutions thereof.

14. The method of claim 1, wherein amino acid residues that differ from residues 7 to 77 of SEQ ID NO:3 consist of the corresponding residues from SEQ ID NO:6.

15. The method of claim 1, wherein said antagonist comprises amino acids 7 to 77 of SEQ ID NO:3.

16. The method of claim 1, wherein said one or more indicia of gastric acid or pepsinogen secretion
5 comprises gastric lesion formation or severity.

17. The method of claim 1, wherein said one or more indicia of gastric acid or pepsinogen secretion comprises reduced ulcer formation or severity.

18. The method of claim 1, wherein said one or
10 more indicia of gastric acid or pepsinogen secretion comprises reduced reflux esophagitis formation or severity.

19. The method of claim 1, wherein said antagonist is administered to a tissue.

15 20. The method of claim 1, wherein said antagonist is administered to an animal.

21. The method of claim 20, wherein said animal is any of rat, cat, dog, non-human primate, and human.

20 22. The method of claim 20, wherein said antagonist is administered to an animal susceptible to developing acid-related gastrointestinal damage.

23. The method of claim 22, wherein said animal has a gastrointestinal cancer.

24. A method of modulating gastric acid secretion, comprising administering an amount of a prokineticin receptor antagonist effective to alter one or more indicia of gastric acid secretion, wherein said 5 antagonist comprises an amino acid sequence at least 80% identical to amino acids 7 to 77 of SEQ ID NO:6, said sequence comprising;

(a) the 10 conserved cysteine residues of SEQ ID NO:6, and

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(b) from 0 to 4 of amino acids 78 to 81 of SEQ ID NO:6,

wherein amino acids 1 to 6 of said antagonist do not consist of amino acids AVITGA (SEQ ID NO:21).

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25. The method of claim 24, wherein said antagonist comprises 6 or more amino acids N-terminal to the first conserved cysteine residue.

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26. The method of claim 24, wherein said antagonist comprises 7 or more amino acids N-terminal to the first conserved cysteine residue.

27. The method of claim 26, wherein said 7 or more amino acids are MAVITGA (SEQ ID NO:23).

28. The method of claim 27, wherein said antagonist comprises SEQ ID NO:18.

29. The method of claim 24, wherein said antagonist comprises 5 or fewer amino acids N-terminal to said first conserved cysteine residue.

5 30. The method of claim 29, wherein said 5 or fewer amino acids are VITGA (SEQ ID NO:22).

10 31. The method of claim 24, wherein amino acid residues that differ from residues 7 to 77 of SEQ ID NO:6 are conservative substitutions thereof.

32. The method of claim 24, wherein amino acid residues that differ from residues 7 to 77 of SEQ ID NO:6 consist of the corresponding residues from SEQ ID NO:3.

15 33. The method of claim 32, wherein said antagonist comprises amino acids 7 to 77 of SEQ ID NO:6.

34. The method of claim 24, wherein said one or more indicia of gastric acid or pepsinogen secretion comprises gastric lesion formation or severity.

20 35. The method of claim 24, wherein said one or more indicia of gastric acid or pepsinogen secretion comprises reduced ulcer formation or severity.

36. The method of claim 24, wherein said one or more indicia of gastric acid or pepsinogen secretion comprises reduced reflux esophagitis formation or severity.

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37. The method of claim 24, wherein said antagonist is administered to a tissue.

38. The method of claim 24, wherein said antagonist is administered to an animal.

39. The method of claim 38, wherein said animal is any of rat, cat, dog, non-human primate, and human.

5 40. The method of claim 38, wherein said antagonist is administered to an animal susceptible to developing acid-related gastrointestinal damage.

41. The method of claim 40, wherein said individual has a gastrointestinal cancer.

10 42. A method for screening for a compound for modulating gastric acid or pepsinogen secretion in a mammal, comprising:

(a) providing a compound that is a prokineticin (PK2) receptor antagonist or agonist; and

15 (b) determining the ability of said compound to modulate one or more indicia of gastric acid or pepsinogen secretion, wherein a compound that modulates said one or more indicia is identified as a compound for modulating gastric acid or pepsinogen secretion in a mammal.

43. The method of claim 42, wherein the provided PK receptor antagonist is identified by contacting a receptor selected from the group consisting of PK2 receptor and PK1 receptor with one or more candidate compounds under 5 conditions wherein PK promotes a predetermined signal and identifying a compound that reduces said predetermined signal.

44. The method of claim 42, wherein the provided PK receptor agonist is identified by contacting a receptor 10 selected from the group consisting of PK2 receptor and PK1 receptor with one or more candidate compounds under conditions wherein PK2 promotes a predetermined signal and identifying a compound that promotes said predetermined signal.

15 45. The method of claim 42 or 43, wherein said predetermined signal is calcium ion mobilization.

46. The method of claim 42 or 43, wherein said receptor is a mouse PK2 receptor.

20 47. The method of claim 45, wherein the provided PK2 receptor antagonist is identified by contacting a receptor selected from the group consisting of PK2 receptor and PK1 receptor with one or more candidate compounds in the presence of a receptor agonist under conditions wherein said 25 agonist binds to the selected receptor and identifying a compound that reduces said binding.

48. The method of claim 47, wherein said receptor agonist is PK2.

49. The method of claim 47, wherein said PK2 is human PK2.

50. The method of claim 42, wherein the provided PK receptor agonist is identified by contacting a receptor selected from the group consisting of PK2 receptor and PK1 receptor with one or more candidate compounds under conditions wherein PK2 binds to a selected receptor and identifying a compound that binds to and activates the selected receptor.

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51. The method of claim 49 or 50, wherein said receptor is a PK2 receptor.

52. The method of claim 49 or 50, wherein said PK2 receptor is a mouse PK2 receptor.